mattress sutures of silk or other permanent material are introduced, the loop firmly grasping the upper margin of the lower flap; sufficient traction is made on these sutures to enable peritoneal approximation with running suture of catgut. The mattress sutures are then drawn into position, sliding the entire lower flap into the pocket previously formed between the aponeurosis and the peritoneum above.

6. The free margin of the upper flap is fixed by catgut sutures to the surface of the aponeurosis below, and the superficial incision closed in the usual manner. In the larger herniæ the incision through the fibrous covering of the sac may be made somewhat above the base, thereby increasing the amount of tissue to be used in the overlapping process."

In performing the operation by overlapping from above downward I have always found it free from tension, which is very essential in obtaining primary union, and it also gives very much more space for respiration which is more or less impeded by the lateral closure. It makes a stronger union than an edge approximation.

I have used the above method in 5 cases, except I always use kangaroo tendon or chromic catgut instead of a non-absorbable suture. In two of the cases I made only one transverse elliptical incision, so that the umbilicus was not removed; this can readily be retained in small hernias, if so desired. The 5 patients have made complete recoveries, without any relapses.

I believe there are no more objections to the performance of this operation for umbilical hernia than to the operation for any other form of hernia, and there should be as great a percentage of recoveries in the same class of patients. Mayo reports 25 operations overlapping from above downward, no deaths or recurrences.

DISCUSSION.

Dr. Emmett Rixford: The Mayo operation for umbilical hernia is a great practical advance on any procedure previously suggested in these cases. In my hands it has proven of the greatest value. Mention has been made of the fact that Andrews of Chicago deserves priority for the use of what he calls "imbrication" in inguinal hernia, and another has referred to the operation of Lucas Championnier in which a sort of "imbrication" is used. As I understand the operation of Mayo, the only claim made as to originality is for a rotation of 90°, i. e., Mayo makes a transverse suture line, thereby shortening the sagittal semi-circumference of the abdomen instead of the transverse or horizontal. And just here is a very important consideration, the abdominal wall is shortened by the operation in exactly the direction in which it is pathologically lengthened, and the direction in which it can be shortened without embarrassing the respiration.

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FURTHER DATA UPON THE CHEST SHAPE IN TUBERCULOSIS.*

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SINCE my attention was first directed to this question by some measurements which I made of tuberculous chests nine years ago, a number of additional data have been collected, some by myself, but more by observers on both sides of the Atlantic whose interest was aroused by the publication of my results in the British Medical Journal in 1900. These measurements now number some 700 and support with singular closeness and unanimity substantially the same conclusions as my first series of 40 measurements; that is, that the tuberculous chest is not *flat*, as at first glance it appears, and as most text-books yet describe it, but *round*, and instead of its antero-posterior diameter being diminished, this is normal, or slightly increased, while the shrinkage has occurred in the transverse diameter.

In order to express the relations of the two diameters of the chest, it was necessary to devise a chest index based upon the same principle as the familiar cranial index, and to determine what this index was first of all in normal individuals.

My first measurements indicated a normal index of 72, but I have since then succeeded in accumulating a series of tables of nearly 5000 measurements of normal individuals, chiefly soldiers in garrisons and college students and athletes in gymnasia, and upon this larger mass the average index is slightly lowered, namely, 70. The measurements of the 700 consumptive chests show an average index of 78, and with the exception of one markedly aberrant series, the other 11 averages, range within one point of 80, either above or below, thus making the consumptive chest 10 degrees rounder than the normal. As these 700 measurements have been taken in three different London hospitals, Leeds, England, in New York, in Chicago, in Buffalo, in Portland, Ore., in San Francisco, and in Memphis, Tenn., they may be regarded as fairly well-establishing an average in this disease. This shape of chest is, of course, the persistence of the child chest, and represents an arrested development at about the proportions, normal at the 12th to the 15th year. As is well known, the fetus has a chest deeper than its width, the infant at birth has an almost circular chest, index from 95 to 100; by 5 years this has flattened to 90 degrees and by 12 years to 80 degrees. This also represents an evolution from the ancestral quadrupedal chest, which in all mammals outside of the human species, except the anthropoid apes, some of the bats and some whales, is much deeper than it is wide. A similar form of chest has also been found by Drs. Evans and McHugh, of Chicago, among the paupers in Cook County Hospital, and by Arthur McGugan among the chronic insane, thus making it probable that it is the type of chest associated with arrested and imperfect development, or as we loosely term it, "degeneracy."

Of this series of cases some 70 were measured in a very early stage of the disease, and these show an index within one point of as high as the rest of the series, thus making it highly probable that this type of chest precedes the disease, although it is probably exaggerated by the increased respiratory effort and interference with proper emptying of the lungs due to the lesions of the disease.

Another straw pointing in the same direction is the fact that of 31 successive cases of phthisis in my own practice, the 16 patients who did badly (6 of them dying) presented an average index of 80.2, while the 15 who did well (4 of them making complete apparent recovery) showed an average index of 74.6.

As only 15 per cent of the tuberculous patients measured failed to show a higher index than the normal, it would thus appear as if the measurements of the chest would furnish a datum of considerable value in the diagnosis of tuberculosis, and that any child or young adult presenting a higher chest index than normal, for their age ought to be given a vigorous open air life with abundance of nutritious food and every measure taken which would promote normal development and the attainment of full vigor.

An exaggeration of this type of chest, due to the lateral pull of the diaphragm gives rise to the pigeon breast of rachitis and pharyngeal adenoids.

The round, long chest and small heart of puberty form the physical basis of the *habitus phthisicalis*.

*Abstract of a paper read before the San Bernardino Medical Society, November 8, 1905.

To obtain the best results in cases of Colles's fracture the patient should be placed under an anesthetic during reduction.—*International Journal of Surgery.*